

Application No. 09/675,984
Reply to Office Action dated January 30, 2006

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REMARKS

Claims 1, 2, 5, 8, 10-18, 20, 23, 25, 27, 30, and 33-57 are presented for further examination.

Claims 1, 5, 8, 18, 20, 25, 44, 47, 51, and 54 have been amended. Claim 57 is new.

In the Office Action mailed January 30, 2006, the Examiner objected to the specification because the abstract had underlining and deletion. Claims 5 and 8 were objected to because of informalities in dependency. Claims 1, 2, 5, 8, 10-18, 20, 23, 25, 27, 30, and 33-56 were rejected under 35 U.S.C. § 102(e) as anticipated by U.S. Patent No. 6,961,954 ("Maybury et al."). Claims 44-50 and 55 were rejected under 35 U.S.C. § 103(a) as unpatentable over Maybury et al. in view of U.S. Patent No. 5,995,095 ("Ratakonda").

Applicants respectfully disagree with the bases for the rejections and request reconsideration and further examination of the claims.

Objection to the Disclosure

The Examiner objected to the Abstract of the Disclosure because of the presence of deletions and underlining. Applicants are submitting herewith a clean Abstract on a single sheet as requested by the Examiner. No new matter has been added. Approval and entry of the substitute Abstract of the Disclosure is respectfully requested.

Claim Objections

Claims 5 and 8 were objected to because of their dependency on canceled claim 3. Applicants have amended claims 5 and 8 to now depend from claim 1.

Claim Rejections

Maybury et al., U.S. Patent No. 6,961,954, describes a state-machine approach to defining broadcast state models for segmenting, capturing, and presenting news broadcast information in summary form. A displayed program summary (for example, see Figure 16 of Maybury et al.) of the news stories in a "storyboard" format utilizes static images that serve as a table of contents, referred to by Maybury et al. at column 18, lines 3 and 13, as a "hierarchical, video table of contents." The static frame images of each of the news stories are displayed along

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with identifying text, and these images are matched with a story summary, topic, gist, and full source text. Maybury et al. describe users having the ability to drill down in increasing levels of detail in each media (audio, video, and text) to the entire segment of the particular news story.

However, Maybury et al. do not disclose, teach or suggest a HierarchicalSummary DS as set forth in the claims. In contrast, as discussed later in detail, the present invention begins where Maybury et al. leaves off.

Ratakonda, U.S. Patent No. 5,995,095, describes a method for summarizing and browsing digital video in which summaries can be browsed at three different levels of content detail, *i.e.*, a compact level, a course level, and a fine level (see column 2, lines 38-40, and column 13, lines 17-36). As shown in Figure 5 of Ratakonda, the course level or image is made up of several finer level images. Ratakonda does not teach or suggest a HierarchicalSummary DS as set forth in the claims.

Claim 1 is directed to a HierarchicalSummary Description Scheme (DS) for describing a video summary of an original video. The HierarchicalSummary DS comprises a HighlightLevel DS having at least one HighlightSegment DS configured to describe information on a highlight segment corresponding to one of a plurality of video summary intervals and that further includes a VideoSegmentLocator DS describing time information or a video itself of the highlight segment and an ImageLocator DS describing a representative frame of the highlight segment, the HierarchicalSummary DS providing direct access to the original video.

Maybury et al., as discussed above, fail to disclose, teach, or suggest the description scheme recited in claim 1. Rather, Maybury et al. describe automated multimedia analysis techniques for analyzing and processing a source multimedia (mainly, broadcasted news programs), and generating a news summary. Maybury et al. are focused principally on how efficiently the content of a news broadcast can be segmented and summarized using a state machine instead of the claimed HierarchicalSummary DS. While Maybury et al. describe their table of contents as "hierarchical," there is no teaching or suggestion in Maybury et al. as to how the news content is organized other than in a multi-level arrangement to permit drilling down to more detailed information. This is similar to the serial approach of Ratakonda which utilizes a first compact level of information followed by a more expansive "course" level that is followed by a "fine" level of information. Thus, Maybury et al. fail to teach or suggest how to organize the

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multi-leveled contents in the manner described and claimed in the present invention, and the combination of Maybury et al. and Ratakonda still fails to disclose or suggest the combination of claim 1.

In contrast, the highlight segment DS in claim 1 includes VideoSegmentLocator DS and ImageLocator DS (i.e. Key frame Locator DS), which are associated with each other at the same hierarchical level. This featured hierarchical structure gives some advantages. For example, multiple key frames may be associated with a single highlight segment, and thus multiple access points to a single highlight segment can be given for flexible dynamic browsing. In particular, when amending or updating the DS (for example adding an additional key frame in a certain segment), the claimed DS does not give any difficulty to the DS generating tool

Even if, at its best, Maybury et al. may be considered to imply a hierarchical structure where the multi-leveled contents are connected in a serial manner, though applicants do not believe that Maybury et al. discloses or implies any specific hierarchical structure itself, this in no way helps one skilled in the art to conceive of the claimed HierarchicalSummary DS of claim 1.

In view of the foregoing, applicants respectfully submit that claim 1 is allowable over Maybury et al. Dependent claims 2, 5, 8, and 10-16 are also allowable over Maybury et al. and the combination of Maybury et al. and Ratakonda for the features recited therein as well as for the reasons why claim 1 is allowable.

Independent claim 17 is directed to a computer-readable recording medium where a HierarchicalSummary DS for describing a video summary of an original video is stored therein. Claim 17 further recites the HierarchicalSummary DS as comprising a HighlightLevel DS having at least one HighlightSegment DS that describes information on a highlight segment corresponding to one of a plurality of video summary intervals and further including a VideoSegmentLocator DS describing time information or a video itself of the highlight segment and an ImageLocator DS describing a representative frame of the highlight segment. Applicants respectfully submit that claim 17 is allowable for the features recited therein as well as for the reasons why claim 1 is allowable.

Claim 18 is directed to a method for generating video summary data by inputting an original video that includes enabling direct access to the original video. Applicants respectfully submit that independent claim 18 is allowable for the reasons discussed above with respect to

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independent claim 1. Dependent claims 20 and 23 are allowable for the features recited therein as well as for the reasons why claim 18 is allowable.

Claim 25 is directed to a system for generating video summary description data according to a video summary description scheme by inputting original video. Claim 25 recites, *inter alia*, a HierarchicalSummary DS that provides direct access to content of the original video through a representative frame information. Applicants respectfully submit that claim 25 is allowable over Maybury et al. because nowhere do Maybury et al. teach or suggest a HierarchicalSummary DS that provides direct access to the contents of an original video through a representative frame information. Rather, these references propose preparing summaries that do not provide a viewer direct access to the complete original video when viewing the summaries. Dependent claims 27, 30, and 33-43 are allowable for the features recited therein as well as for the reasons why claim 25 is allowable.

Independent claim 44 is directed to an apparatus for browsing video summary description data from an original video in which, *inter alia*, a direct access part provides direct access to the contents of the original video through the original video representative frame part when playing the first summary level of video interval or the second summary level of video interval. Maybury et al. do not teach or suggest such a direct access part. Independent claim 47 is directed to a method of browsing video summary description data and accessing original video in which directly accessing the original video through the video summary representative frame is done when playing the first summary level of video summary or when playing the video interval of the original video corresponding to the representative frame. Claim 51, which is directed to a video summary description scheme and claim 54 which is directed to a method of browsing video summary description data of an original video, both provide for direct access to the contents of the original video either through the HighlightSegment DS (claim 51) or when playing a first summary level of a video summary or playing a video interval of an original video (claim 54). Applicants respectfully submit that these claims are allowable for the reasons discussed above with respect to claim 1. In addition, Maybury et al. do not disclose the organization of the information as other than serial-connected news content. In contrast, the present invention begins where Maybury et al. leaves off. For example, the present invention provides direct access to the original video through the representative frame in the HierarchicalSummary DS.

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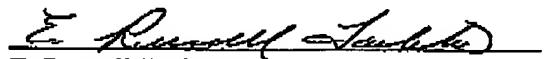
All claims depending therefrom are also allowable for the features recited therein as well as for the reasons why the independent claims are allowable.

New claim 57 depends from claim 54 and recites that directly accessing comprises directly accessing the contents of the original video through the representative frame. Nowhere do Maybury et al. or Ratakonda, taken alone or in any combination thereof, teach or suggest such direct accessing of an original video.

In view of the foregoing, applicants respectfully submit that all of the claims in this application are clearly in condition for allowance. In the event the Examiner finds minor informalities that can be resolved by telephone conference, the Examiner is urged to contact applicants' undersigned representative by telephone at (206) 622-4900 in order to expeditiously resolve prosecution of this application. Consequently, early and favorable action allowing these claims and passing this case to issuance is respectfully solicited.

The Director is authorized to charge any additional fees due by way of this Amendment, or credit any overpayment, to our Deposit Account No. 19-1090.

Respectfully submitted,
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Enclosures:

Supplemental Information Disclosure Statement Transmittal
Supplemental Information Disclosure Statement

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